

Appl. No. : **Unknown**
Filed : **Herewith**

IN THE CLAIMS:

Please cancel Claims 1-22 without prejudice.

Please add the following new claims:

23. An all-terrain vehicle comprising a frame, an engine connected to the frame, at least one front wheel and at least one rear wheel connected to the frame, the at least one rear wheel being driven by the engine, the vehicle additionally comprising a hydraulic drive system for driving the at least one front wheel, the hydraulic drive system comprising a pump, a motor, and an accumulator in fluid communication with each other, the pump being driven by the engine to create a flow of hydraulic fluid within the hydraulic system, the motor being configured to drive the at least one front wheel in response to the flow of hydraulic fluid and the accumulator being configured to pressurize the hydraulic drive system.

24. The all-terrain vehicle of Claim 23, the hydraulic drive system additionally comprising a supply passage arrangement configured to supply hydraulic fluid from an outlet of the pump to an inlet of the motor, a return passage arrangement configured to return fluid from an outlet of the motor to an inlet of the pump, the accumulator being in fluid communication with the return passage arrangement.

25. The all-terrain vehicle of Claim 24, wherein the hydraulic drive system additionally comprises a switching valve and a bypass passage arrangement, the bypass passage arrangement being in fluid communication with the supply passage arrangement and the return passage arrangement, the switching valve operable between at least a rear wheel drive position and an all wheel drive position, the switching valve configured to allow a flow of fluid from the supply passage arrangement to the return passage arrangement through the bypass passage in the rear wheel drive position, the switching valve configured to substantially prevent a flow of fluid from the supply passage arrangement to the return passage arrangement in the all wheel drive position.

26. The all-terrain vehicle of Claim 25, wherein the hydraulic drive system additionally comprises a relief valve in fluid communication with the supply passage arrangement and the return passage arrangement, the relief valve being configured to permit

Appl. No. : **Unknown**
Filed : **Herewith**

hydraulic fluid to pass from the supply passage arrangement to the return passage arrangement when the fluid pressure in the supply passage arrangement exceeds a predetermined threshold fluid pressure.

27. The all-terrain vehicle of Claim 25, wherein the hydraulic drive system additionally comprises a check valve in fluid communication with the supply passage arrangement and the return passage arrangement, the check valve being configured to permit hydraulic fluid to pass from the return passage arrangement to the supply passage arrangement when the fluid pressure in the supply passage arrangement is less than the fluid pressure in the return passage arrangement.

28. The all-terrain vehicle of Claim 27, wherein the hydraulic drive system additionally comprises a housing and a filter, the housing defining a working oil chamber, the filter being configured to separate impurities from the hydraulic fluid, the filter and the accumulator being disposed within the housing, the switching valve arrangement, a relief valve and the check valve being connected to the housing, the relief valve being configured to permit hydraulic fluid to pass from the supply passage arrangement to the return passage arrangement when the fluid pressure in the supply passage arrangement exceeds a predetermined threshold fluid pressure.

29. The all-terrain vehicle of Claim 28, wherein the housing comprises a longitudinal center axis, the filter being disposed on a first side of the center axis and the accumulator being disposed on a second side of the center axis, the housing additionally comprising a hydraulic fluid inlet disposed upstream of the filter and a hydraulic fluid outlet being disposed downstream of the filter, the fluid inlet and fluid outlet being disposed on the first side of the center axis.

30. The all-terrain vehicle of Claim 23, wherein the hydraulic drive system additionally comprises a housing and a filter, at least a portion of the housing enclosing a working oil chamber, the filter being configured to separate impurities from the hydraulic fluid, the filter and the accumulator being disposed within the housing.

31. The all-terrain vehicle of Claim 30, wherein the filter comprises a first longitudinal axis and the accumulator comprises a second longitudinal axis, the filter being

substantially adjacent to the accumulator and the first longitudinal axis being generally parallel to the second longitudinal axis.

32. The all-terrain vehicle of Claim 31, the vehicle additionally comprising an exhaust pipe having a first end connected to the engine and a second end connected to a muffler, the housing being disposed adjacent to the muffler.

33. The all-terrain vehicle of Claim 23, wherein the accumulator comprises a flexible bladder at least partially defining a pressurized gas chamber, the bladder having a surface at least partially exposed to hydraulic fluid within the hydraulic drive system.

34. The all-terrain vehicle of Claim 23, wherein the accumulator comprises a movable piston at least partially defining a pressurized gas chamber, the piston having a surface at least partially exposed to hydraulic fluid within the hydraulic drive system.

35. The all-terrain vehicle of Claim 23, wherein a wheel shaft is connected to the frame by a front fork, the at least one wheel being rotatably supported on the wheel shaft, a cover fixedly supported relative to the front fork and supporting the motor, the at least one wheel having an internal gear, the motor having an output shaft, an output gear fixed for rotation with the output shaft, the output gear being in meshed engagement with the internal gear such that rotation of the output gear causes rotation of the at least one wheel.

36. The all-terrain vehicle of Claim 35, wherein the at least one wheel comprises a generally cylindrical hub portion defining a recess between an open end and a closed end, the cover being disposed at least partially within the recess, the internal gear being positioned between the closed end and the cover, the cover including a sealing arrangement configured to create a substantial seal between the recess and the hub portion.

37. The all-terrain vehicle of Claim 36, wherein the sealing arrangement comprises a labyrinth seal formed on a peripheral surface of the cover and a rubber seal member.

38. The all-terrain vehicle of Claim 37, wherein a substantial portion of the motor is disposed on the opposite side of the cover from the output gear, the cover including an aperture, the output shaft extending through the aperture from the motor to the output gear.

39. The all-terrain vehicle of Claim 35, wherein the wheel is rotatably supported on the wheel shaft by at least one ball bearing assembly.

Appl. No. : **Unknown**
Filed : **Herewith**

40. The all-terrain vehicle of Claim 35, wherein the wheel is rotatably supported on the wheel shaft by a ball bearing assembly and a needle bearing assembly, the needle bearing assembly being spaced from the ball bearing assembly.

41. The all-terrain vehicle of Claim 23, additionally comprising means for allowing the at least one front wheel to rotate at a speed which is greater than the speed in which the motor drives the at least one front wheel.

42. The all-terrain vehicle of Claim 41, wherein the hydraulic drive system is configured to drive the at least one front wheel at a speed which is less than the speed of the at least one rear wheel when substantially no wheel slippage is present.

43. An all-terrain vehicle comprising a frame, an engine connected to the frame, a left front wheel and a right front wheel and a pair of rear wheels connected to the frame, the pair of rear wheels being driven by the engine, the vehicle additionally comprising a hydraulic drive system for driving the left and right front wheels, the hydraulic drive system comprising at least one pump, a left motor, a right motor, and an accumulator in fluid communication with each other, the at least one pump being driven by the engine to create a flow of hydraulic fluid within the hydraulic system, the left motor being hydraulically powered to drive the left front wheel, the right motor being hydraulically powered to drive the right front wheel, and the accumulator being configured to pressurize the hydraulic drive system.

44. The all-terrain vehicle of Claim 43, the hydraulic drive system additionally comprising a left supply passage arrangement configured to supply hydraulic fluid from an outlet of the at least one pump to an inlet of the left motor, a right supply passage arrangement configured to supply hydraulic fluid from an outlet of the at least one pump to an inlet of the right motor, a return passage arrangement configured to return fluid from an outlet of the left motor and an outlet of the right motor to an inlet of the at least one pump, the accumulator being in fluid communication with the return passage arrangement.

45. The all-terrain vehicle of Claim 44, wherein the left supply passage arrangement is independent from the right supply passage arrangement.

Appl. No. : **Unknown**
Filed : **Herewith**

46. The all-terrain vehicle of Claim 44, wherein the hydraulic drive system additionally comprises at least one of an oil filter and an oil cooler disposed in hydraulic series with the return passage arrangement.

47. The all-terrain vehicle of Claim 43, wherein the hydraulic drive system additionally comprises a switching valve and a bypass passage arrangement, the bypass passage arrangement being in fluid communication with the left and right supply passage arrangements and the return passage arrangement, the switching valve having at least a two wheel drive mode and a four wheel drive mode, the switching valve being configured to allow a flow of fluid from the left supply passage arrangement and the right supply passage arrangement to the return passage arrangement through the bypass passage in the two wheel drive mode, the switching valve configured to substantially inhibit a flow of fluid from the left supply passage arrangement and right supply passage arrangement to the return passage arrangement through the switching valve in the four wheel drive mode.

48. The all-terrain vehicle of Claim 47, wherein the hydraulic drive system additionally comprises a differential valve and a first communication passage, the first communication passage being in fluid communication with the left supply passage arrangement and the right supply passage arrangement, the differential valve having at least an unlocked position and a locked position, the differential valve being configured to allow a flow of fluid between the left supply passage arrangement and the right supply passage arrangement through the first communication passage in the unlocked position, the differential valve being configured to substantially prevent a flow of fluid between the left supply passage arrangement and the right supply passage arrangement through the first communication passage in the locked position.

49. The all-terrain vehicle of claim of Claim 43, wherein the at least one pump comprises a left pump and a right pump, the hydraulic drive system additionally comprising a left pump circuit, a right pump circuit, a left motor circuit, a right motor circuit and an oil recovery circuit, the left motor circuit being in fluid communication with the left pump circuit and the recovery circuit, the right motor circuit being in fluid communication with the left pump circuit and the recovery circuit, the recovery circuit additionally being in fluid communication with the left and right pump circuits, the hydraulic drive system having at least a forward mode

and a reverse mode, the forward mode comprising the left pump initiating a flow of fluid in a first direction from the left pump circuit to the left motor circuit to drive the left motor in a first direction, the flow of fluid returning to the left pump circuit through the oil recovery circuit and the right pump initiating a flow of fluid in the first direction from the right pump circuit to the right motor circuit to drive the right motor in the first direction, the flow of fluid returning to the right pump circuit through the oil recovery circuit, the reverse mode comprising the left pump initiating a flow of fluid in a second direction from the left pump circuit to the left motor circuit to drive the left motor in a second direction, the flow of fluid returning to the left pump circuit through the oil recovery circuit and the right pump initiating a flow of fluid in the second direction from the right pump circuit to the right motor circuit to drive the right motor in the second direction, the flow of fluid returning to the right pump circuit through the oil recovery circuit.

50. The all-terrain vehicle of Claim 43, wherein the at least one pump comprises a first pump, the hydraulic drive system additionally comprising a flow rate divider configured in a first mode to divide the flow of hydraulic fluid into a first flow of fluid for driving the left motor and a second flow of fluid for driving the right motor such that the left and right motors are driven at a substantially equal rate.

51. The all-terrain vehicle of Claim 50, wherein the flow rate divider is configured in a second mode to divide the flow of hydraulic fluid such that the first flow is greater than the second flow in response to a load on the left wheel being greater than a load on the right wheel and additionally configured to divide the flow of hydraulic fluid such that the second flow is greater than the first flow in response to the load on the right wheel being greater than the load on the left wheel.

52. The all-terrain vehicle of Claim 51, additionally comprising a high speed bypass valve configured to allow a flow of hydraulic fluid to bypass the flow rate divider during high speed operation of the all-terrain vehicle.

53. The all-terrain vehicle of Claim 51, wherein the flow rate divider is a spool valve.

54. An all-terrain vehicle comprising a frame, an engine connected to the frame, a left front wheel and a right front wheel and a pair of rear wheels connected to the frame, the pair of